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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/568,771 | 02/21/2006 | Philippe-Luc Bres | 4702-39 | 6682 |
| 23117 | 7590 | 02/02/2010 | EXAMINER | |
| NIXON & VANDERHYE, PC | | | HINDENLANG, ALISON L. | |
| 901 NORTH GLEBE ROAD, 11TH FLOOR | | | ART UNIT | PAPER NUMBER |
| ARLINGTON, VA 22203 | | | 1791 | |
| MAIL DATE | | DELIVERY MODE | | |
| 02/02/2010 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|------------------------------------|
| Office Action Summary | Application No. 10/568,771 | Applicant(s) BRES ET AL. |
| | Examiner ALISON HINDENLANG | Art Unit 1791 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 October 2009.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-15, 17-24 and 27-29 is/are pending in the application.

4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 15, 17-24 and 27-29 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/06)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15, 17-24, 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Carlier (US 6271272)(already of record) as evidenced by Harclerode (US 5240657).

3. With respect to claim 15, Carlier teaches:

Pre-expanded beads having a bulk density chosen from a range of from 40 to 190 g/l ("before molding, the expanded beads generally have a bulk density of 7 to 50 kg/m³", column 11, lines 38-39) and containing by weight:

- (a) 100 parts of a polymer of styrene, ("100 parts by weight of the styrene polymer", column 11, lines 30-31)
- (b) from 0.5 to less than 3.0 parts of at least one blowing agent and ("from 0.5 to 6 parts by weight of the blowing agent", column 11, lines 31-32)
- (c) from 0 to 0.4 part of at least one plasticising agent, ("from 0 to 1.0 part by weight of the nucleating agent", column 11, line 36)

wherein the pre-expanded beads are expandable and in particular capable of subsequent expansion without the addition of a fresh quantity of blowing agent. ("materials obtained ... from the expanded beads mentioned above, may be expanded moulded parts of any geometrical shape and of any volume", column 11, lines 40-43)

4. Carlier does not specifically teach a blowing agent composition at the pre-expanded stage or explicitly teach that the pre-expanded beads would be capable of further expansion, however examiner considers that these limitations would inherently

be met as evidenced by Harclerode which is used as evidence only in response to applicants argument regarding these points.

5. Harclerode shows that only a small amount of blowing agent is lost in a typical expansion process (example 16, column 24, line 54 to column 25, line 15, Table 2) and that a significant amount of blowing agent remains even after a polystyrene bead has been pre-expanded and subsequently molded (table 2). Thus a pre-expanded bead with the blowing agent composition taught by Carlier would inherently retain enough blowing agent after a pre-expansion step to meet the limitation of the instant claim.

6. Also, the presence of remaining blowing agent indicates that the bead would be capable of additional expansion. Further more Harclerode also teaches that "molding is effectuated by placing preexpanded beads into a mold, closing the mold so that a substantially confined volume is produced and thereafter further heating the preexpanded beads so that they further expand and substantially fill the volume within the mold and fuse" (column 14, lines 25-30) showing that it is known in the art that preexpanded beads are capable of further expansion.

7. With respect to claim 17, Carlier further teaches that "the weight-average molecular mass, M_w, of the styrene polymer generally lies between 150,000 and 300,000" (column 5, lines 23-24).

8. With respect to claims 18 and 29, Carlier further teaches that a mixture of n-pentane and iso-pentane maybe used as the blowing agent (column 5, lines 31-35).

9. With respect to claims 19 and 20, Carlier teaches "from 0.5 to 6 parts by weight of the blowing agent" (column 11, lines 31-32).

10. With respect to claim 21 and 22, Carlier further teaches "from 0 to 1.0 part by weight of a nucleating agent chosen from synthetic Fischer-Tropsch or polyolefin waxes" (column 4, lines 35-36).
11. With respect to claim 23, Carlier further teaches "the beads of expandable styrene polymer may have a diameter of 0.2 to 3.0 mm" (column 5, lines 4-5).
12. With respect to claim 24, Carlier teaches "the expanded beads generally have a bulk density of 7 to 50 kg/m³" (column 11, lines 38-39).
13. With respect to claim 27, as explained in the rejection of claim 15, the preexpanded beads taught by Carlier would retain sufficient blowing agent to be capable of further expansion without adding new blowing agent.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlier (US 6271272) as applied to claim 17 above, and further in view of Harclerode (US 5240657).

17. With respect to claim 28, Carlier, as applied to claim 17, does not disclose the molecular weight distribution of the polystyrene.

18. In the same field of endeavor, expandable polystyrene compositions, Harclerode teaches using a styrene with a molecular weight between 180,000 to 300,000 (column 17, line 57), where "the polymer generally exhibits a polydispersity of from about 1 to less than 2.5" (column 17, lines 41-43, table 1) for the purpose of producing a uniform product. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose a styrene with a polydispersity such as that taught by Harclerode for the purpose of producing a uniform product. Further more it has been held to be obvious to one of ordinary skill to select a known material on the basis of its suitability for the intended use. *Sinclair & Carroll Co. v. Interchemical Corp.*, 65 USPQ 297 (1945).

Response to Arguments

19. Applicant's arguments filed 10/09/2009 have been fully considered but they are not persuasive. Applicant argues that it is impossible to know whether the preexpanded beads taught by Carlier would meet the blowing agent and further expandable limitations of claim 15.

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20. As explain in the rejection of claim 15 above, examiner considers these two limitations to be inherently present in Carlier. First, as evidenced by Harclerode, a typical expansion process, including the stabilization and molding steps, does not consume all of the blowing present in an initial composition, thus there would still be sufficient blowing agent present in a pre-expanded bead such as that produced in Carlier to meet both the concentration and further expansion limitations.

21. Secondly, Carlier teaches that the pre-expanded beads are further subjected to a molding operation but does not detail such a process. Harclerode further teaches that it is known in the art that a molding step will cause further expansion of pre-expanded beads as additional heating is part of molding. Thus sufficient blowing agent must inherently remain in the composition being molded to affect this further expansion.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALISON HINDENLANG whose telephone number is (571) 270-7001. The examiner can normally be reached on Monday to Friday 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on 571-272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ALH

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1791